Detailed Emissions Results for Acid Rain Program Affected Units

Detailed tabular results for the Acid Rain Program are presented in Appendices A and B. The following is a description of the contents of the Appendices.

Appendix A

Consists of two data tables: Table A1 and Table A2.

Table A1 presents the annual SO_2, CO_2, NO_x emission rate, NO_x mass emissions and heat input data for all Title IV affected units for the following years: 1995 through 2000 and the SO_2 and heat input data for 1980, 1985, and 1990. The data are ordered alphabetically, first by State name and then by plant name and unit id within each State. A unique numeric code used to identify each plant, known as the "ORISPL" code, is included in a column adjacent to the plant name. The column labeled "Unit ID" identifies the unit within the plant for which data are reported. The "Associated Stack" column identifies any stack or pipe associated with this unit.

The SO_2, CO_2, NO_x emission rate, NO_x mass emissions and heat input data for each plant listed in Table A1 are displayed at the unit level, or "Unit ID", within the plant. In cases where different types of monitors are located at different sites within a plant or the connections between units and stacks are complicated, the data have been assimilated to the basic (unit) level for ease of presentation and comparison. In the case where a stack is fed by more than one unit, the stack is referred to as a "common stack" and is prefixed by "CS" in the "Associated Stack" column (the constituent units are listed in parentheses). A stack/unit arrangement where a stack is fed by more than one unit, any of which feeds another stack is called a "complex stack" and is prefixed by "XS" in the "Associated Stack" column (again, the constituent units are listed in parentheses). Analogous definitions apply to common fuel pipes ("CP" prefix) and complex fuel pipes ("XP" prefix). If a single unit feeds multiple stacks, the stack values are combined and listed at the unit level. Any ID listed in the "Associated Stack" column that does not contain any of the aforementioned prefixes refers to an individual unit.

Table A2 provides State-level summaries of the annual SO_2, CO_2, NO_x emission rate, NO_x mass emissions and heat input data for all Title IV affected units for the following years: 1995 through 2000 and the SO_2 and heat input data for 1980, 1985, and 1990. The resulting national totals for those years are also presented at the end of the table.

Appendix B

Consists of five data tables: B1, B2, B3, B4, and B5.

Table B1 presents the total annual 2001 SO_2, NO_x, CO_2, and heat input data for all Title IV affected units, along with additional descriptive information. The data are ordered alphabetically, first by state name and then by plant name and unit id within each state. A unique numeric code used to identify each plant, known as the "ORISPL" code, is included in a column adjacent to the plant name. The column labeled "Unit ID" identifies the unit within the plant for which data are reported. The various "Unit ID" definitions used in Table B1 are discussed below. The "Associated Stack" column identifies any stack or pipe associated with the unit.

The SO_2, NO_x, CO_2, and heat input data for each plant listed in Table B1 are displayed for the unit locations, or "Unit ID", within the plant. In cases where different types of monitors are located at different sites within a plant or the connections between units and stacks are complicated, the data have been assimilated to the basic (unit) level for ease of presentation and comparison. In the case where a stack is fed by more than one unit, the stack is referred to as a "common stack" and is prefixed by "CS" in the "Associated Stack" column (the constituent units are listed in parentheses). A stack/unit arrangement where a stack is fed by more than one unit, any of which feeds another stack is called a "complex stack" and is prefixed by "XS" in the "Associated Stack" column (again, the constituent units are listed in parentheses). Analogous definitions apply to common fuel pipes ("CP" prefix) and complex fuel pipes ("XP" prefix). If a single unit feeds multiple stacks, the stack values are combined and listed at the unit level. Any ID listed in the "Associated Stack" column that does not contain any of the aforementioned prefixes refers to an individual unit.

NOTE: Table B1 displays both the average NO_x emission rate (lb/mmBtu) and the NO_x mass emissions (tons). Under the Acid Rain Program facilities are only required to report the average NO_x emission rate. As a result, the NO_x mass emissions values contained in the table were calculated by weighting the hourly average NO_x emission rate (lb/mmBtu) by hourly heat input (mmBtu/hr) and the operating time, and then dividing by 2000 to convert the resulting value to tons.

Table B1 also contains eight columns that provide descriptive information (in a coded format) about each Unit ID listed. These columns are labeled "Status," "SO_2 Phase," "NO_x Phase," "Boiler Type," "Primary Fuel," "Secondary Fuel," "Primary SO_2 Controls" and "Primary NO_x Controls," and their associated codes are described below:

Status describes the operating status of each stack or unit. The status codes are defined as follows:

Blank	*Operational (no permit exemptions), affected under Title IV*
DF	*Deferred unit, did not operate in 2001 (typically has been in long-term shutdown since before 1995), but is affected under Title IV*
FU	*Future unit (planned or under construction), will be affected under Title IV when operational*
NA	*Non-affected*
NO	*Non-Operating unit, plant did not operate during 2001*
N	*New*
N (1)	*New unit, but has not reported emissions*
RE	*Retired unit*
RE (1Q)	*Retired after First Quarter 2001*
RE (3Q)	*Retired after Third Quarter 2001*

SO_2 Phase describes the Acid Rain Program SO_2 "phase" classification for each stack or unit. The phase codes are defined as follows:

1	*Phase I, Table 1 unit (263 units)*
Opt-In	*Phase I, Non-Table 1 unit (e.g., a unit that opted-in to the program for 2000)*
2	*Phase II unit*

NO_x Phase describes the Acid Rain Program NO_x "phase" classification for each stack or unit. The phase codes are defined as follows:

G2	*Group 2 unit (165 units)*
P1G1	*Phase I, Group 1 unit (265 units)*
P2EE	*Phase II Early Election unit (273 units)*
P2G1	*Phase II, Group I unit (343 units)*

Boiler Type describes the type of boiler used as of the end of 2000 for the Unit ID. Boiler Type codes are defined

as follow:

AF	*Arch Fired*	*ICE*	*Internal combustion engine*
C	*Cyclone*	*OB*	*Other boiler*
CB	*Cell burner wall-fired*	*OT*	*Other turbine*
CC	*Combined Cycle*	*S*	*Stoker*
CFB	*Circulating fluidized bed*	*T*	*Tangential fired*
CT	*Combustion turbine*	*WBF*	*Wet bottom wall-fired*
DB	*Dry bottom wall-fired*	*WBT*	*Wet bottom turbo-fired*
DTF	*Dry bottom turbo-fired*	*WVF*	*Wet bottom vertical-fired*
DVF	*Dry bottom vertically-fired*		

Primary Fuel describes the primary fuel used by each unit. The fuel types are:

C	*Coal*	*OOL*	*Other Oil*
DSL	*Diesel Oil*	*PNG*	*Pipeline Natural Gas*
GAS	*Gas*	*PRG*	*Process Gas*
NNG	*Natural Gas*	*PRS*	*Process Sludge*
OGS	*Other Gas*	*R*	*Refuse*
OIL	*Residual Oil*	*W*	*Wood*
LPG	*Liquefied Petroleum Gas*	*PDG*	*Producer Gas*

Secondary Fuel describes the secondary fuel used by each unit. The fuel types are the same as the primary fuels.

Primary SO_2 Controls describes the type of SO_2 control technology (scrubber), if any, reported as installed as of the end of 2001 for the Unit ID. Facilities employ these controls in order to assist or assure compliance with SO_2 emission requirements under the Acid Rain Program or other regulatory programs. The control codes are defined as follows:

DA	*Dual alkali*	*SB*	*Sodium based*
DL	*Dry lime FGD (flue gas desulfurization)*	*U*	*Uncontrolled*
FBL	*Fluidized Bed Limestone Injection*	*WL*	*Wet lime FGD*
MO	*Magnesium Oxide*	*WLS*	*Wet limestone*
NR	*SO_2 not reported for Unit ID*	*Blank*	*No information reported for the Unit ID*
O	*Other*		

Secondary SO_2 Controls describes the secondary control(s) used by each unit. The controls are the same as the primary SO_2 controls listed in the table above..

Primary NO_x Controls describes the type of NO_x control technology, if any, reported as installed as of the end of 2001 for the Unit ID. Facilities employ these controls in order to assist or assure compliance with NO_x emission requirements under the Acid Rain Program or other regulatory programs. The control codes are defined as follows:

CM	*Combustion modification with fuel reburn*	*NH3*	*Ammonia Injection*
DLNB	*Dry Low NO_x Burners (Turbines Only)*	*NR*	*Not reported*
H_2O	*Water Injection (Turbines and Cyclone Boilers only)*	*O*	*Other*
LNB	*Low NO_x burner technology*	*OFA*	*Overfire air*
LNBO	*Low NO_x burner technology with overfire air*	*SCR*	*Selective catalytic reduction*
LNCB	*Low NO_x burner technology for cell burners*	*SNCR*	*Selective non-catalytic reduction*
LNC1	*Low NO_x burner technology with close-coupled OFA (Tangentially fired units only)*	*STM*	*Steam Injection*
LNC2	*Low NO_x burner technology with seperated OFA (Tangentially fired units only)*	*U*	*Uncontrolled*
LNC3	*Low NO_x burner technology with close-coupled and separated OFA (Tangentially fired units only)*	*Blank*	*No information reported for the Unit ID*

Secondary NO_x Controls describes the secondary control(s) used by each unit. The controls are the same as the primary NO_x controls listed in the table above..

Primary Particulate Controls describes the type of particulate control technology, if any, reported as installed as of the end of 2001 for the Unit ID. The control codes are defined as follows:

B	*Baghouse(s)*	*O*	*Other*
ESP	*Electrostatic Precipitator*	*C*	*Cyclone*
WS	*Wet Scrubber*		

Secondary Particulate Controls describes the secondary control(s) used by each unit. The controls are the same as the primary particulate controls listed in the table above.

Table B2 provides Plant-Level summaries of the 2001 SO_2, NO_x, CO_2, and heat input data by state. The resulting totals for each plant are represented and state totals are represented after each state listing.

Table B3 provides State-level summaries of the 2001 SO_2, NO_x, CO_2, and heat input data for coal-fired units. The resulting national totals for coal-fired units is presented at the end of the table.

Table B4 provides State-level summaries of the 2001 SO_2, NO_x, CO_2, and heat input data for non-coal-fired units. The resulting national totals for non-coal-fired units is presented at the end of the table.

Table B5 provides State-level summaries of the 2001 SO_2, NO_x, CO_2, and heat input data for **all** units. The resulting national totals for non-coal-fired units is presented at the end of the table.